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ABSTRACT

This paper discusses an aspect of "designed learning," focusing on self-contained written programs dealing with grammatical structure at the concept or principle level, to be used by the student outside of class without the aid of an instructor. Several self-contained partial "programs" dealing with fundamental morphological and semantic concepts are proposed. The notion that different modes of learning exist and, therefore, require differentiation in the development of teaching strategies is emphasized. (RL)

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STUDENT GOALS AND SOUND PEDAGOGY: SOME DIFFERENT DIRECTIONS FOR PROGRAMMED MATERIALS

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There are presently two major concerns in foreign language departments--a meaningful and relevant second language learning experience and more effective and efficient learning. Both are of concern to students and teachers alike. Both require innovative teaching strategies.

The students want to be able to put their new language to use; therefore, they want a "live" class, whether the activity be listening and speaking, or reading, or both. In other words, they want a classroom situation where language is being used, as opposed to a pseudo-language learning context or a context of continuous discourse about language. This does not mean that students see no need for learning basic structure. In fact, they want better explanations of grammar, and criticize the lack of sufficient examples. The objection against "grammar" is mainly a matter of priority in the utilization of contact time with the instructor. If I might paraphrase the student view, "Let me learn the grammar on my own. In class, let's use the language." For the student, the only justification for tolerating classroom explanations of what is already explained in the text is if more examples and context are given or if the explanation in the text is unclear. In either case wouldn't it be nice (and much more efficient) if the instructor could hand out his explanation in written form?

It is generally accepted that habit formation and automatic manipulation are an essential part of second language learning and that although the laboratory is the primary place for such drill and practice, a certain amount of introductory and review drilling has a place in the classroom. But this class activity must be done in such a way that the pseudo-language learning has some semblance to real language usage.

Teachers, while sharing the student concern for a more meaningful second language experience, continue to seek out more effective and efficient designs for learning. We have a more rational view now than a few years back. The discussion pertaining to the pros and cons of the audio-lingual method is not so heated. There is now talk of a habit forming and cognitive approach, of an "eclectic" method.

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This paper is not a research report as such but it does arise from an experiment conducted by the author at Indiana University. The purpose of the experiment was to test, empirically, two different teaching techniques in the presentation of certain grammatical principles. To fulfill this purpose and to insure controlled experimental conditions, it was decided to construct two learning programs.[1] The enthusiastic student response to the program format of that experiment, supported by similar student testimony cited elsewhere[2] gives credence to some recent remarks of Augustus A. Koski:

> . . . there can hardly be any question about the use and value of programmed instruction, in varying degree and for various purposes, in the language curriculum. Let us then, with firmer determination and dedication, work to develop better, more varied and more objective programmed language materials and procedures. . . . . Let us constantly be alert to question what many may call "established" principles of language programming. And above all, let us keep in mind that language programming is actually in its infancy, and as such, on a highly experimental level.[3]

Koski's appeal, coupled with certain of my convictions about foreign language teaching and some special interests therein, has drawn by attention to Programmed Language Instruction (PLI) and the concern with PLI has, in turn, given impetus to the ideas expressed in the present paper. Briefly, the convictions are (1) there are different types of learning and, therefore, there is more than one way of teaching; (2) a clear and precise statement of objectives is essential for effective teaching; (3) the language material to be taught must be organized in a manner that illustrates usage in terms of underlying invariants, not in terms of generalizations based on contextual variants; and (4) the presentation of the material must be determined with the goal of achieving the most effective and efficient learning.

The interests are "designed" learning, "live" second language learning classroom situations, and second language learning at the concept and principle level.

Before any suggestions can be made for different directions of programmed materials, an explanation must be given of what is meant here by programs or programmed learning. In general, I prefer Carroll's broader view of programmed learning which he terms "designed" learning and defines as,

> an arrangement and sequencing of experience that is optimally designed to eventuate in some form of increased competence on the part of the learner. <u>Designed learning</u>, as we may call it,

> requires the orchestration of all we know about learning, about the requirements of the subject matter or skill to be learned and about characteristics of learners, into a program or into programs of instruction.[4]

In the present paper, the discussion is focused on a particular aspect of "designed learning," namely, on self-contained written programs to be used by the student outside of class, without the aid of an instructor, and dealing with grammatical structure at the concept or principle level.

For most, programs have come to mean a full introductory or intermediate course which attempts to be completely self-instructional and to shape verbal behavior. The ultimate goal is fluency in the second language, the design of the program is based on the Skinnerian model and "hardware" plays a major role. I mean by programs: partial, "software," self-contained materials for all levels of second language learning, which are an integral part of "designed learning" and therefore complement "live" language situations and the role of the teacher and/or native informant--materials concerned not with the verbal aspects of language learning, but with fundamental and essential concepts of morphology and semantics. These "programs" do not adhere to strict Skinnerian principles, but they do draw upon learning theory and linguistic theory as well as on teacher experience and insight. In this last respect the programs are highly experimental and research orientated in that they are used to test the applicability of linguistic and learning theory or various "methods" for second language learning.[5]

This definition of "programs" raises several questions. Why the content delimitations of morphology and semantics at the concept or principle level? What are the implications of such "programs?" What, for example, are the requirements for writing the programs described? What purposes can these "programs" serve? What must be done? And how does one start?

Reasons for concentrating on the morphological aspect of language are several. Of the three major areas of linguistics, viz., phonology, morphology, and syntax, phonology has already enjoyed considerable success in programmed materials.[6] Syntax, on the other hand, is complex and still too much an unknown. There is yet much work to be done in morphology and efforts in this area can be most fruitful. Although we may not know which grammatical structures are the most essential, we do know that knowledge of basic structural concepts is necessary to second language learning. The development of the kind of programs I suggest will give us better explanations of the basic and by their experimental nature we will gain much knowledge about language acquisition, sequencing of basic structure, the development of "designed learning" and the role of programs in such improved learning strategies.

As for the concern with the concept and principle level, I stated above the conviction that there are different types of learning. In a general sense these can be divided into two kinds: habit formations (verbal associations) and cognitive understanding (concepts, principles). In our enthusiasm for adopting a habit formation theory of learning, we have neglected the cognitive understanding facet of learning. I do not, however, urge concentration on the concept and principle level merely to offset an imbalance in pedagogical procedure. The fact is that not all language learning is of the habit formation type. There are some "language facts" which must be learned at the concept level. Others may be learned in a habit formation way but it would be inefficient to do so.

What are some implications of such "programs?" As for requirements, the main concerns are the organization, i.e., the analysis of grammatical structure and the ensuing principles of usage; and the presentation--the format and instructions of the program. If the structure items are to be learned at the concept or principle level, the organization must be such that the principles governing usage account for all the variant contexts and usages. In other words, the linguistic analysis must be based on a theory which seeks morphological and semantic invariants.

The problem of presentation is complex and cannot be simply stated. Furthermore, a suitable explanation is beyond the scope of this paper. Briefly, there must first be a statement of terminal goals made in terms of performance. In other words, knowledge of a given principle must be demonstrated by performance and the performance must be defined so as to describe an objective, unambiguous, overt act. After the terminal performance has been defined one must turn to learning theory to determine the "learning structure" or actual "program."

What purposes can such "programs" serve? The "programs" can be classified according to three functions--auxiliary, primary, and experimental. As an integrated part of "designed learning," they can fulfill several roles with an auxiliary function: (1) supplementary role--providing further examples and context of concepts introduced in class or in the text; (2) preparatory role--teaching concepts that will be used in the "live" language situation;[7] (3) assessment role--couched in learning theory, the "programs" can serve as both a diagnostic and achievement testing tool; (4) treatment role--accounting for individual differences. A battery of "programs" on various problems can be an effective means of bringing the remedial student up to a desired level.

For many language facts, "programs" can be the primary medium of learning. The decisive factor would be the criterion of effective and efficient learning.

The experimental function is very important. "Programs" can be a great help in testing linguistic and learning theories, linguistic analyses

and teaching methods. The program format offers many advantages for control of experimental conditions.

What must be done? How does one start? Of course, the type of program one writes and the purpose it would serve is dependent upon one's particular interests and training. With the given delimitations there should be empirical testing of the application of linguistic theory to second language learning. There should be comparison of the effectiveness of grammatical rules formulated on the basis of morphological invariants as opposed to "traditional" rules. Teachers should draw on experience and insight to formulate and test different methods of presentation. There is a need for additional controlled experiments that contrast different "instructions."[8] There should also be empirical testing of the applicability of learning theory to second language learning.

This is the start, the content of the "programs." To actually write a "program" is another matter. The writing of a "program" requires some knowledge of learning theory. Perhaps this is the reason why many teachers shy away from programs. But this is not the obstacle that many may think. One need not be an expert in learning theory to write a "program." Sufficient knowledge can be gained through reading[9] or by taking a course in learning which is offered by any School of Education. I urge you to acquire this knowledge and write "programs"--to experiment, to find more information about effective teaching procedures, to see in what ways programs fit into "designed learning."

I have advocated self-contained partial "programs" dealing with fundamental morphological and semantic concepts, which would function as an integral part of "designed learning" and also help test, for the purposes of second language learning, linguistic and learning theory, linguistic analyses, and methods of presentation. The ultimate goal of such programs is for effective and efficient learning. This endeavor would draw on knowledge from the fields of linguistics and psychology as well as from teacher experience and instinct. It has been stressed that there are different types of learning and therefore there should be different teaching strategies.

This plea is made in light of student goals which include "live" language learning, efficient learning, better explanations with more examples, and, possibly, student-made rules; and for a sound pedagogy which can best be described as "designed learning."

NOTES

1. The two programs, both of which were written according to Robert M. Gagné's conditions of learning, represented different kinds of instructions. Program X used "technical terms," whereas the use of labels was avoided in Program Y. The programs also represented a "deductive" (Program X) and "inductive" (Program Y) presentation, the principles being given in Program X, but discovered through problem solving in Program Y. Besides comparison for determining the general superiority of one approach over the other, if indeed one was superior, there was a particular interest in transfer of knowledge. See L. G. Heien, "A Psycholinguistic Study in the Organization and Presentation of Grammatical Principles," Unpublished Ph.D. Dissertation, Bloomington: Indiana University, 1969.

2. Cf., for example, William H. Clark, "Using Programmed Language Courses in College," in Theodore Mueller, editor, Seminar in Programmed Learning (New York: Appleton-Century-Crofts, 1968), pp. 11-17.

3. Augustus A. Koski, Introductory Remarks to the "Seminar on Programmed Learning," 20th Foreign Language Conference of the University of Kentucky, in Theodore Mueller, Seminar in Programmed Learning, (New York: Appleton-Century-Crofts, 1968), pp. 11-17.

4. John B. Carroll, "Psychological Aspects of Programmed Learning in Foreign Languages," in Mueller, Seminar, pp. 63-73.

5. Teachers should not be over anxious to adopt linguistic theory as a pedagogical method. We should also be leery of adopting learning theories in toto--particularly those that claim to be a prototype of all kinds of learning. Chomsky warned of this at the Northeast Conference of 1966, ". . . it is difficult to believe that either linguistics or psychology has achieved a level of theoretical understanding that might enable it to support a 'technology' or language learning." Noam Chomsky, "Linguistic Theory," in Language Teaching: Broader Contexts, Reports of the Working Committees, Northeast Conference, 1966, p. 43.

6. Cf., for example, William A. Henning, "Discrimination Training and Self-Evaluation in the Teaching of Pronunciation," International Review of Applied Linguistics in Language Teaching, 4, No. 1 (1966), 7-17.

7. This is, in part, the role Valdman would give to his "Presentation Device" which is preparatory to the "Display Session." Albert Valdman, "Toward a Better Implementation of the Audio-Lingual Approach," The Modern Language Journal, 54, No. 5 (1970), 309-319.

8. In the experiment (described in Note 1), there was a significant difference in vertical transfer between the problem solving group (Program Y) and the other group (Program X) with the problem solving group doing better. This implies that our presentation should be such that students make their own rules. Such an assumption must be further tested.

9. Robert L. Gagné's The Conditions of Learning (New York: Holt, 1965) has been an inspiration to the present author and has proven useful for both teaching and research.